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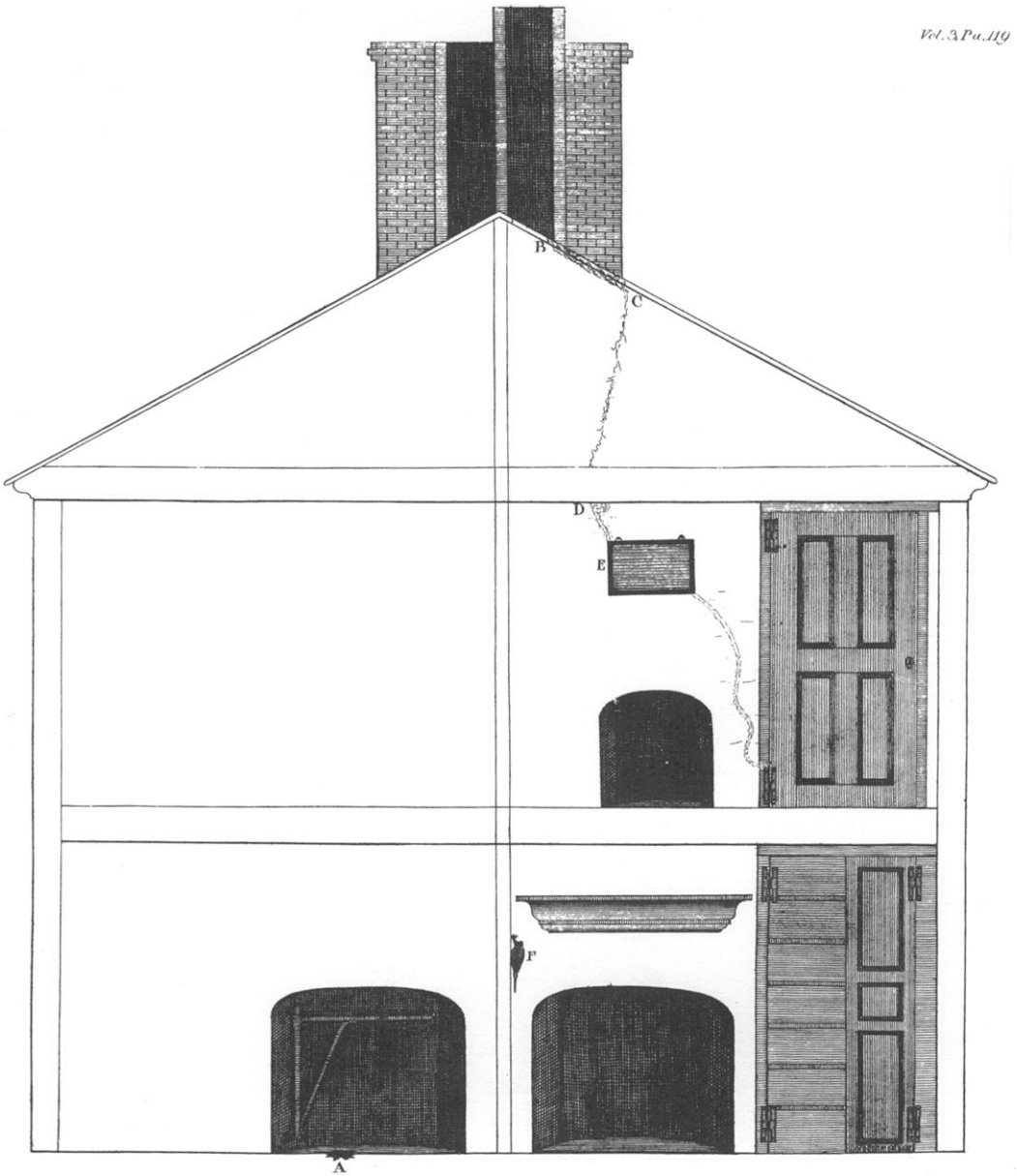
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B
C
D
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F
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N°. XIV.

Account of ſeveral HOUSES *in Philadelphia, ſtruck with* LIGHTNING, *on June* 7, 1789. *By* Mr. DAVID RITTENHOUSE, *and* Dr. JOHN JONES.

Read July 17, 1789.

ON Sunday the 7th of June, 1789, whilſt a thunder-guſt from the South-weſt was paſſing over this city, a flaſh of lightning ſtruck two adjoining buildings, the kitchens of houſes on the South ſide of Drinker's Alley.

The annexed drawing repreſents an inſide view of part of the South end of theſe buildings. The funnels of the two kitchen chimneys, and thoſe of the two chambers over them are carried up ſeparately by the ſide of each other. They had been originally of the ſame height, but that on the right hand next the middle has been raiſed ſince about two feet higher. There was a fire burning at the time in the two kitchen chimneys, whoſe funnels are carried up in the midſt of the ſtack. The lightning at the ſame inſtant paſſed through theſe two funnels, and by rarifying the encloſed air, forced out the wall on the North ſide of each down to the roof. It continued down that to the left, until it came to the iron hook ſuſpended on the crane, where a woman, who was ſtanding by the fireſide, ſays ſhe ſaw it like a large ball of fire. From thence it paſſed either along the hook or the crane, or probably both, and entered the hearth at A. cloſe to the back wall, throwing up the bricks and earth, and making a cavity as large as a man's head. That part of the lightning which came down the right hand funnel, came out of it at B. making a ſlight eraſure of the roof, cloſe along the chimney, until it came to C. where it proceeded through the roof, and along the ſurface of the wall to D.

Here

Here it entered the chamber, tearing off ſome of the cieling and plaiſtering of the wall. At E. hung a glazed picture with a gilded frame, which was ſhivered to pieces. It appears to have paſſed both ways along the gilding of the frame to the oppoſite corner, from thence it paſſed along the ſurface of the wall in a crooked line, which it has marked pretty ſtrongly, about half an inch wide, to the upper end of the lower hinge of the cloſet door. From the bottom of this hinge it ſeems to have paſſed, by the rivets through to the inſide of the cloſet, and probably by a nail through the floor, burſting off the cieling and lathing of the cloſet of the kitchen below. This cloſet door was broken to pieces, and thrown to a diſtance by the exploſion, the left hand ſtile only remaining. From this cloſet it ſeems to have diſperſed in every direction. No traces of it are to be ſeen on the walls of the cloſet, but a number of pewter plates and diſhes which were ſtanding on the ſhelves were a little melted where they touched each other only. Part of the lightning appears to have paſſed along the ſhelf over the fire place, on which ſtood a coffee-pot and other kitchen furniture, which it only diſplaced without injuring them. At F. a large hand bellows was ſuſpended by a ſtring on a nail, the back board of which was ſplit through, apparently with great violence.

Both the kitchens were filled with ſmoke, ſoot, and aſhes by the exploſion, but no perſon hurt. The woman who ſaw the ball of fire at the upper end of the pot hook, is confident that it proceeded upwards. This opinion was probably founded on the exploſion of the bricks and earth upwards at A. We know not any appearance which could determine whether its progreſs was upwards or downwards.

A young woman who was ſitting on the right ſide of the cloſet door, within a foot of the ſhivered part, received

ceived no other injury than a ſlight diſcoloration in one of her feet, with a ſenſe of numbneſs in both, which diſappeared the following day.

From this ſtack of chimneys, in the direction of the ſtorm, that is Southweſt, there is no lightning rod, nor any more elevated building, for a conſiderable diſtance, which might have intercepted the ſtroke; but immediately to the North and North Eaſt, the adjoining buildings are much higher, and there is one pointed rod, at no great diſtance.

It is remarkable that the lightning paſſed through the two chimneys only which had fire in them, though two others were contiguous. And we were told that the chimney which it quitted at the roof had very little fire in it. The late Mr. Henry, in a paper read before the Philoſophical Society, has endeavoured to ſhew that heat is the conducting medium of the electrical fluid. It may perhaps be doubted whether it is the matter of heat, or the effects of it in rarefying bodies that diſpoſes them to conduct electricity. It is however certain that barely rarefying the the air, without any additional heat will make it conduct the electrical matter readily, and probably it was the column of rarefied air which conducted the lightning down theſe chimneys. Whilſt volcanos are throwing forth prodigious columns of fire ſmoke and aſhes, corruſcations of lightning are frequently ſeen amongſt them: the extenſive rarefaction of air, produced by theſe immenſe fires, affording the means of reſtoring the equilibrium of the electrical fluid to very great diſtances. We may from hence conclude that it is ſafer to be near a chimney that has no fire in it, during a thunder-guſt, than one that has fire.

The houſes above deſcribed were ſtruck in the beginning of the thunder-guſt, and before it had rained any. Sometime afterwards, in the greateſt fall of rain, the lightning

ning ſtruck Mr. Blanchard's houſe, in third ſtreet. This is a three ſtory houſe, having two ſtacks of chimneys, Eaſt and Weſt of each other one on each ſide of the higheſt part of the roof. Several bricks were thrown off one corner of the weſtermoſt ſtack. The lightning is ſuppoſed to have come down a wooden rod, furniſhed with an iron ſpindle and vane, the whole about fourteen feet in length which ſtood by the ſide of this chimney top, though no marks of it are viſible on the rod. From near the foot of this rod it proceeded down a rafter on the Eaſt ſide of the roof, ſplitting it through its whole length, and breaking up the ſhingles over it. From the foot of this rafter it proceeded quietly down a copper ſpout without injuring the building or leaving any other traces on it.

N°. XV.

An Account of the effects of a ſtroke of Lightning on a Houſe furniſhed with two Conductors,—in a Letter from Meſſrs. DAVID RITTENHOUSE *and* FRANCIS HOPKINSON; *to Mr.* R. PATTERSON.

Read Oct. 15, 1790.

ON Tueſday evening, the 17th of Auguſt, 1789, the dwelling houſe of Mr. Thomas Leiper, at his Mills, near Cheſter, was ſtruck by lightning. As this is a remarkable caſe, the houſe being furniſhed with two good conductors, Mr. Leiper requeſted us to view the ſituation of the building and the effects of the lightning, which we did three days after the accident.

The houſe ſtands at the foot of a pretty ſteep aſcent, on the Weſt ſide of Crum creek, and within a few yards of the mill dam. It is a regular ſtone building 36 feet by 32, two ſtories high at the Weſt end, above ground, and three